

BEFORE THE STATE OF WASHINGTON  
ENERGY FACILITY SITE EVALUATION COUNCIL

In re Application No. 96-1 )  
 )  
 of )  
 )  
 OLYMPIC PIPELINE COMPANY )  
 )  
 For Site Certification )  
 \_\_\_\_\_ )

**PRE-FILED TESTIMONY OF  
ED WHITELAW**

ISSUE:

ECONOMIC IMPACT

SPONSORS:

Tidewater Barge Lines  
Tidewater Terminal Company  
Maritime Environmental Coalition

1 **Q. Please introduce yourself to the Council.**

2 A. My name is Ed Whitelaw. I am the president of ECONorthwest, a consulting firm in  
3 economics, finance and planning with offices in Eugene and Portland, Oregon, and  
4 Seattle, Washington. I am also a professor of economics at the University of Oregon.  
5

6 **Q. Please describe your educational and your professional employment background.**

7 A. I received my Bachelor of Arts from the University of Montana in 1963, and my Ph.D. in  
8 economics from the Massachusetts Institute of Technology in 1968. I currently specialize  
9 in microeconomics, the economic consequences of policy decisions, urban and regional  
10 economics, and resource and environmental economics. My past and present advisory  
11 positions include: EPA National Advisory Council for Environmental Policy and  
12 Technology; the Oregon Progress Board (chaired by the Governor, with responsibility for  
13 charting long-term state policy); the Oregon Economic Development Commission; the  
14 Statistical and Scientific Advisory Committee to the Northwest Power Planning Council;  
15 the Oregon Governor's Council of Economic Advisors; and the Advisory Committee on  
16 Cities to the President Domestic Council. My curriculum vitae is attached as  
17 Exhibit EW-1. It lists over 80 publications on economic issues.  
18

19 **Q. Please summarize the topics you will discuss in your direct testimony.**

20 A. My testimony addresses four main topics.  
21

22 First, I discuss the lack of need for the proposed Cross Cascade pipeline, and explain the  
23 basic supply and demand for petroleum in Central and Eastern Washington (Eastern  
24 Washington).  
25  
26

1 Second, I discuss the potential negative economic consequences (including job loss) on  
2 Tidewater Barge Lines and Tidewater Terminal Company (Tidewater) and other related  
3 Washington businesses if the proposed pipeline is built.

4 Third, I discuss the potential negative economic consequences on Washington grain  
5 farmers and the Washington grain market if the proposed pipeline is built.  
6

7 Finally, I discuss the potential negative economic consequences to consumers in the  
8 region if the proposed pipeline is built.

9 **Q. Please briefly summarize your conclusions.**  
10

11 A. First, the proposed Cross Cascade pipeline is not needed to supply petroleum to Eastern  
12 Washington. The present system provides an adequate, relatively inexpensive supply of  
13 petroleum. The Yellowstone pipeline, the Chevron/Boise pipeline, Tidewater, and tanker  
14 trucks are able to supply adequately Eastern Washington now and in the future. The  
15 communities and economies of Eastern Washington have today, and will have for the  
16 foreseeable future, “abundant energy at reasonable cost.” Residents and businesses in the  
17 region pay some of the lowest gasoline prices in Washington.

18 Second, the proposed pipeline would have serious economic consequences on Tidewater  
19 and related businesses located in Vancouver, Pasco, and other parts of Washington.

20 Approximately 89 Tidewater employees will lose their jobs if the proposed pipeline is  
21 built. The resulting loss of income is approximately \$5.7 million. The secondary impacts  
22 of these lost jobs is a loss of an additional 172 jobs and approximately \$5.5 million in  
23 income. Total employment and income losses resulting from construction of the  
24 proposed pipeline are 261 jobs and approximately \$11.2 million in income. Olympic  
25  
26

1 claims it will replace these 89 jobs with 8 to 10 pipeline employees. (Application, pg. 8.1-  
2 29.)

3 Third, the proposed pipeline would increase transportation costs for grain. Currently,  
4 when Tidewater hauls petroleum upriver, it also tows empty grain barges. When  
5 Tidewater hauls full grain barges down river, it also tows empty petroleum barges. This  
6 system of backhaul opportunities makes it cheaper for both petroleum and grain  
7 customers to take advantage of the Columbia River marine transportation system. With  
8 the proposed pipeline, grain transporters must pay the entire cost of marine transportation  
9 up and down river. Another factor contributing to increased transportation charges for  
10 grain is Tidewater's idled investment in double-hulled petroleum barges. Since 1992,  
11 Tidewater has had built and has financed over \$20,000,000 in new, state-of-the-art  
12 petroleum barges designed specifically for marine transportation on the Columbia River.  
13 Without the opportunity to transport petroleum, Tidewater must recoup its investment in  
14 these barges from revenues generated by grain transport alone. Farmers in Eastern  
15 Washington would also face reduced frequency of downriver barge traffic if the proposed  
16 pipeline is built.

17  
18 Finally, consumers would likely be negatively impacted by construction of the proposed  
19 pipeline. The proposed pipeline would likely reduce competition for petroleum products  
20 in Eastern Washington, which should lead to increased prices for gasoline in the area.

21 **Q. Is the proposed pipeline needed?**

22  
23 **A.** Absolutely not.  
24  
25  
26

1   **Q.    Why?**

2    A.    There is no shortage of petroleum products for residents or businesses in Eastern  
3           Washington. No shortage is expected in the foreseeable future. The draft Environmental  
4           Impact Statement (DEIS) summaries the supply and demand conditions of the region  
5           succinctly:  
6

7                   “Early in the process, it became evident that this is not a proposal to satisfy  
8                   a petroleum shortage in Eastern Washington.”

9           DEIS, pg. 1-8. The suggestion in the Revised Application (Application) that the  
10          Yellowstone pipeline supply of refined product to the region is limited by crude  
11          oil supplies is unsubstantiated and contradicted by one of the shippers on the  
12          Yellowstone pipeline. Conoco, commenting on the supply of crude oil to the  
13          Rocky Mountain refineries that transport refined product on the Yellowstone line,  
14          states that:  
15

16                   “There is ample crude oil supply due to three recent pipeline expansions  
17                   that provide increased crude oil from Canada to Billings and other Rocky  
18                   Mountain areas.

19                   Further, in 1992 Conoco made an investment of roughly \$149 million to  
20                   construct a coking unit at its Billings refinery. Subsequently, Conoco has  
21                   invested another \$78 million at its Billings refinery. . . . Conoco would  
22                   not have made such substantial investments at its refinery if there were not  
23                   ample crude oil supply available, or if it did not intend to market its  
24                   products aggressively throughout the region.”  
25  
26

1 (See Exhibit EW-2, (Letter from Erick Schlueter to Allen Fiksdal, December 15,  
2 1998, pg. 3.).)

3 Further, Olympic's own expert, Paul Rolinak, admits that there is no shortage of  
4 petroleum in Eastern Washington. (Exhibit EW-3, pg. 2, lines 23-25.)  
5

6 The conclusion that Eastern Washington face an "abundant supply" of petroleum  
7 products *without* the proposed pipeline is inescapable. With the availability of increased  
8 barge deliveries from the west, and increased deliveries via pipelines from the east—  
9 supported by the new and plentiful crude oil supply from the Express pipeline—the  
10 region will not face a shortage of petroleum products now or in the foreseeable future.

11 **Q. If there is not a need for increased petroleum supply to the region, is there a need**  
12 **for a claimed lower cost of transportation pipeline?**  
13

14 A. No. Residents and businesses in the Tri-Cities area of Washington pay less for gasoline  
15 than those in other parts of the state. (Exhibit EW-4.)

16 **Q. How do Seattle and Portland/Vancouver receive their petroleum supply?**  
17

18 A. Seattle receives petroleum products directly from the existing north-south pipeline.  
19 Portland and Vancouver receive petroleum products from the same north-south pipeline,  
20 and via ocean barges from refineries in Puget Sound, and via ocean barges and tankers  
21 from refineries in California.

22 **Q. How does the Pasco area receive its petroleum supply?**  
23

24 A. Petroleum travels to Pasco a number of different ways. It is shipped via barge from  
25 refineries in either Puget Sound or California to Portland, where it is transferred to barge  
26 for delivery up the Columbia River to Pasco. Petroleum also travels south from the Puget

1 Sound refineries via the north-south pipeline, where it is then transferred to barges and  
2 delivered up river. Refineries in Montana pump petroleum to Pasco via the Yellowstone  
3 pipeline, and refineries in Utah pump petroleum to Pasco through Boise via the Chevron  
4 pipeline. Finally, tanker trucks deliver petroleum to Eastern Washington.

5 **Q. How is the method of petroleum transportation related to the consumer price of**  
6 **gasoline in the region?**  
7

8 A. Given the retail prices in Exhibit EW-4, and the different modes of supply, there seems to  
9 be no relationship between the method of delivery and prices at the pump. On page 40 of  
10 the DEIS, EFSEC's consultant concludes that "competition drives gasoline prices more  
11 than transportation costs." Considering the multiple sources of supply currently serving  
12 Pasco, and the fact that the area enjoys lower prices than elsewhere in the state, and the  
13 distance from Pasco to the Puget Sound refineries relative to other locations with more  
14 expensive gas (e.g., Seattle), I conclude that competitive forces of supply and demand  
15 contribute significantly to the low petroleum prices in Eastern Washington.

16 Residents and businesses in Eastern Washington have access to gasoline at some of the  
17 least expensive prices in the state. From a regional economic perspective, the proposed  
18 Cross Cascade pipeline is therefore unnecessary. Residents in Eastern Washington  
19 already have abundant supplies of petroleum products from numerous sources and at  
20 reasonable cost. Even the DEIS recognizes this fact when it notes that the proposed  
21 pipeline will not have "any significant effect on per gallon fuel prices to the public. . . ."  
22 (DEIS, pg. 2-34.)  
23  
24  
25  
26

1 **Q. Please describe your understanding of the current supply system to Eastern**  
2 **Washington.**

3 A. Eastern Washington is currently supplied by four sources: the Yellowstone pipeline, the  
4 Chevron/Boise pipeline, river barge transportation, and tanker truck transportation.  
5 However, Chevron has announced that it plans to reverse its pipeline in 2000, so it may  
6 no longer be a source for Eastern Washington.  
7

8 **Q. Please describe your understanding of the maximum capacity of the current**  
9 **transportation system to Eastern Washington.**

10 A. According to Thomas H. Wise of Purvin & Gertz, Inc., the Yellowstone pipeline has a  
11 current capacity into Eastern Washington of 45,000 BPD, and a potential capacity of  
12 56,000 BPD with the use of drag-reducing agent (an increase in output of 25%). (Exhibit  
13 THW-T (pre-filed testimony of Thomas H. Wise).) The DEIS also reports that  
14 Yellowstone's capacity into Eastern Washington is 56,000 BPD. (DEIS, pg. 2-41.)  
15

16 Tidewater has a current capacity to deliver approximately 80,000 BPD of petroleum into  
17 Umatilla, Oregon, and Clarkston/Wilma, Washington, and Pasco, Washington. In 1998,  
18 Tidewater delivered approximately 2,000 BPD to Clarkston/Wilma and 8,000 BPD to  
19 Umatilla, out of 41,168 BPD transported upriver from Portland. (Exhibit EW-5.)

20 Assuming that these amounts remain stable, Tidewater currently has the maximum  
21 capacity to transport 70,000 BPD into Eastern Washington without adding any additional  
22 barges.

23 According to the DEIS, tanker trucks are currently carrying approximately 13,500 BPD  
24 into Eastern Washington. (DEIS, Table 2-10.) Even if marine transportation of petroleum  
25 to Eastern Washington remains constant at 35,000 BPD, then the current system,  
26



1 exclusive of trucks and the soon-to-be-reversed Boise/Chevron pipeline, has the ability to  
2 transport 80,000 BPD to Eastern Washington.

3 The total potential capacity of the existing system into Eastern Washington including the  
4 Boise/Chevron line (with a current capacity of 19,000 BPD), existing truck transport,  
5 marine transport and an expanded Yellowstone pipeline is approximately 158,500 BPD.  
6

7 **Q. How much petroleum is currently supplied to Eastern Washington?**

8 A. Approximately 65,000 to 70,000 BPD.  
9

10 **Q. What is the basis of this statement?**

11 A. The amount of petroleum supplied to Eastern Washington is very difficult.  
12

13 According to Thomas H. Wise of Purvin & Gertz, Inc., the Yellowstone pipeline  
14 delivered approximately 20,500 BPD into Eastern Washington in 1998. Tidewater  
15 delivered approximately 35,000 BPD into Eastern Washington (41,168 BPD from  
16 Portland including approximately 2,000 BPD transported to Clarkston/Wilma and minus  
17 approximately 8,000 BPD transported to Umatilla, Oregon. During this year, the  
18 Chevron/Boise line supplied approximately 6,000 BPD to Pasco.

19 Even if we accept Olympic's unsupported claim that 13,500 BPD are trucked from  
20 Western to Eastern Washington, the total supply of petroleum into Eastern Washington  
21 amounts to only 75,000 BPD.<sup>1</sup>  
22

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24 <sup>1</sup> According to Olympic's expert, the truck numbers are not reliable, as they are derived  
25 by backing out the other supply numbers from the consumption figures. (Exhibit EW-6, pg. 2,  
26 lines 8-24.)

1 **Q. Does Olympic differentiate between “Consumption” and “Demand”?**

2 A. Yes. In this case, Olympic defines “consumption” as demand in Eastern Washington  
3 alone. It defines “demand” as product demanded in Eastern Washington, plus that sent  
4 through Washington to Central and Northern Idaho and to Eastern Oregon. (See Exhibit  
5 EW-7, pg. 2.)  
6

7 **Q. Does this distort the Applicant’s explanation of “demand” for petroleum in Eastern**  
8 **Washington?**

9 A. Yes. According to the Application, in 1996 the amount of petroleum transported into  
10 Eastern Washington was approximately 81,500 BPD. (Application, Table 9.1-1.)  
11 However, if you analyze “consumption,” you will see that the actual demand was far less.  
12 Energy Analysts International, Inc., Olympic’s expert, report in their 1997 report that the  
13 consumption in Eastern Washington in 1996 totaled only 66,313 BPD. (Exhibit EW-8.)  
14 This consumption was made up of 41,543 BPD of gasoline, 3,270 BPD of kerosene jet,  
15 and 21,500 BPD of distillate.  
16

17 **Q. What is the demand for petroleum products in Eastern Washington?**

18 A. It is either 66,000 BPD according to Olympic’s expert Paul Rolinak or, according to  
19 Thomas H. Wise of Purvin & Gertz, Inc., as low as 59,000 BPD.  
20

21 Because the truck-transportation numbers are artificially constructed, and because trucks  
22 make stops all along the route from Seattle to Pasco, truck traffic cannot be accurately  
23 estimated by simply attributing all supply to that method which can’t be otherwise  
24 accounted for.  
25  
26

1 **Q. How will reversal of the Boise/Chevron line affect supply and demand?**

2 A. Because the Boise/Chevron line currently supplies approximately 6,000 BPD to Pasco,  
3 and because the reversed line would have a capacity of approximately 19,000 BPD, it  
4 could create a demand for an additional 25,000 BPD of product in Pasco. However, it is  
5 just as likely that it would cause excess demand of only 6,000 BPD in Pasco, as Boise  
6 does not currently face a shortage, and may not require supply from Pasco. If there is  
7 demand in Boise for petroleum on the Chevron/Boise line, the then Olympic is building  
8 the pipeline for Washington refineries to serve growing Idaho markets.  
9

10 **Q. Olympic claims that shippers are demanding a pipeline from Puget Sound into**  
11 **Eastern Washington to meet their needs. Does this make sense?**

12 A. No. Olympic claims that demand for pipeline services originates with “shippers.” The  
13 Application states,  
14

15 “A Cross Cascade petroleum products pipeline is necessary to meet the  
16 ever-increasing demand for product in Eastern Washington. The project is  
17 being proposed at the request of OPL’s customers, the shippers who  
18 transport product from the western Washington refineries to markets in  
19 central and eastern Washington.”

20 (Application, p. S-2.) The DEIS states,  
21

22 “Shippers are generally free to acquire product from whomever they want.  
23 In an open, competitive market, a shipper who is responsible for providing  
24 product to a Pasco customer (or to itself) could contact the Yellowstone,  
25 Chevron, or Olympic pipeline companies, depending upon which oil  
26 company they bought the product from. Such purchase is usually a multi-

1 year contract. They then make arrangements for storing the product, if  
2 necessary, if various transport modes are used. Demand on any pipeline  
3 carrier, then, is dependent on the number and volume of requests they get  
4 from shippers. It is not a factor of supply and demand or local need for  
5 gas, for example. It is a response to shippers.” [emphasis in original]

6 “External factors of product price, transport reliability, supply, transport  
7 cost, storage cost, and other factors are all known to the shippers before  
8 they make their orders. Regardless of the size, capacity, or location of a  
9 pipeline, the shippers determine demand on the pipeline and the need to  
10 carry product. They make similar demand on truck and barge companies  
11 when pipelines are not available. This is noteworthy because it is the  
12 shippers who generally determine the flow, volumes, size or create a  
13 market for a pipeline, not the pipeline company itself.”  
14

15 (DEIS, p. 1-7.) The suggestion that shippers determine demand for pipeline  
16 services is wrong. Demand for *all* petroleum-related products and services,  
17 everything from locating subsurface petroleum sources, to refining products, to  
18 transporting products, to pumping gasoline into a car at a service station, derives  
19 from the ultimate consumers. It is demand created by residents and businesses that  
20 drives the entire network of petroleum production and delivery. Fewer ultimate  
21 consumers generate lower demand. This concept is basic to every economics  
22 textbook I’ve seen in the 30+ years I’ve been teaching. Olympic’s customers may  
23 be shippers, but residents and businesses dictate the quantity and type of OPL’s  
24 services. Shippers are irrelevant without the demand created by consumers. The  
25 central issue when considering the proposed pipeline is the demand for petroleum  
26 products by ultimate consumers in Eastern Washington. Given the low prices

1 enjoyed in Eastern Washington, it is highly unlikely that consumers are  
2 demanding the proposed pipeline.

3 **Q. Will the growth in Eastern Washington outpace the current petroleum supply**  
4 **network?**

5  
6 A. Exhibit EW-9 lists projected population and average annual growth rates for population  
7 in Western Oregon, Western Washington, and Eastern Washington. I distinguish these  
8 regions based on existing supply routes for petroleum. The Exhibit illustrates that the  
9 large majority of population in the two regions is on the west side. The combined  
10 population in Western Oregon and Washington, at approximately 7.3 million, is over five  
11 times larger than the population in Eastern Washington. The average annual growth rate  
12 in both regions is approximately 1.3 percent. However, in absolute terms, population  
13 growth to the year 2020 on the west side, projected at over 2 million, is over five-and-  
14 one-half times larger than the growth in Eastern Washington.

15 Population growth and distribution are significant in this case because of the direct  
16 relationship between population and petroleum consumption. (Exhibit EW-10, James  
17 McDonald memo to Neil Sullivan, October 2, 1997.) According to Thomas H. Wise,  
18 “[o]ver a five-year period (1992-1997) demand in Western Washington/Oregon has  
19 grown by 35,000 B/D while demand in the Eastern Washington supply area has grown by  
20 5,000 B/D.” Exhibit THW-T. Thus, the growth in demand on the west side was seven  
21 times the growth in Eastern Washington. Arguably, Olympic proposes building a  
22 110,000 BPD pipeline to serve Eastern Washington where demand is increasing annually  
23 at the rate of only 1,000 BPD.  
24  
25  
26

1 In the Application, Olympic states that *all* growth in the demand for petroleum in Eastern  
2 Washington would be satisfied by refineries in the west and be transported to the region  
3 by barge and truck.

4 “The existing OPL pipeline system reached its capacity for shipments from  
5 the refineries near Anacortes to Seattle and Vancouver/Portland in 1995;  
6 therefore, without the Cross Cascade Pipeline, all future growth in eastern  
7 Washington demand would have to be transported by barge and truck.”  
8 (EFSEC Application 96-1, Revised May†1, 1998, p.-S-4)  
9

10 This is incorrect, and completely ignores the Yellowstone pipeline.

11 **Q. Will the proposed pipeline cause negative economic consequences?**

12  
13 A. Yes.

14 **Q. Describe in detail the economic consequences of the proposed pipeline on Tidewater**  
15 **and related businesses that benefit from Tidewater’s operation.**  
16

17 A. Tidewater Barge Lines currently employs 205 people in Clark County, Washington.  
18 Tidewater Terminal Company employs three people in Umatilla County, Oregon, four in  
19 Whitman County, Washington, 22 in Franklin County, Washington, and 15 people at  
20 other locations (a total of 44 terminal employees).

21 According to the proponents, the cross-Cascade pipeline would have no impact on  
22 Tidewater Barge Company. Olympic states in the Application,  
23

24 “While there would be a decrease in the barge transport of fuel on the  
25 Columbia River if this project is constructed, there is no evidence to  
26 indicate that there would be a overall decrease in barge traffic and jobs

1 associated with barging. Petroleum product barges are ‘trailed’ along  
2 with other barges hauling other products.”

3 (Application, p. 8.1-31.) Tidewater is the only barge company that hauls  
4 petroleum up river from Portland to Pasco. The proposed pipeline is designed  
5 specifically to replace barge transport of petroleum to Pasco. In its petition for  
6 intervention, Tidewater states,  
7

8 “If the Council grants a competitive advantage to Olympic, the adverse  
9 impact on the well-being of Tidewater, its employees and its customers is  
10 without question. The millions of dollars invested in new technologies  
11 [state-of-the-art doubled-hulled petroleum barges] will have been wasted,  
12 as these barges will be unable to compete with the pipeline under present  
13 economic projections. This will leave petroleum transportation in the  
14 exclusive hands of the pipeline companies. In addition, the cost of  
15 carrying grain will necessarily increase as Tidewater will be deprived of  
16 the primary cargo which permits its equipment to move upstream on a  
17 paying basis. The livelihood of many of its employees will then be at  
18 risk.”

19 (Tidewater’s Petition for Intervention, p. 4-5.) In the Pre-hearing Order Granting  
20 In Part, On Condition, And Denying Petitions For Intervention, Frederick Adair,  
21 The EFSEC Chair stated,  
22

23 “8. Tidewater Barge Lines and Tidewater Terminal Company (Tidewater).  
24 Construction of the pipeline could have substantial effect not only on  
25 Tidewater, but on the entire Columbia-Snake River barge system, with a  
26 potential effect on the regional economy in general.

1 The proponents' claim of no adverse impacts on Tidewater is unsupportable. A  
2 significant portion of Tidewater's business is hauling and handling petroleum. These  
3 activities employ workers on the river and in terminals. Based on information available  
4 at this time Tidewater estimates the proposed pipeline would cause it to terminate  
5 60 river workers and 29 terminal workers, for total employment impacts of 89. The  
6 resulting loss of income is approximately \$5.7 million. (See Exhibit EW-11.) These are  
7 direct economic employment impacts from the construction and operation of the pipeline.

8 However, loss of the petroleum barging component of Tidewater's operations would have  
9 additional indirect and induced impacts on the overall economy of Eastern Washington.  
10 The estimated additional job loss from the termination of Tidewater's petroleum transport  
11 operations is approximately 172 jobs, totaling over \$5.5 million in total income. These  
12 indirect and induced impacts are derived using commonly accepted techniques. These  
13 impacts are summarized in Exhibit EW-12. Total direct and downstream impacts are  
14 261 jobs with income of more than \$11 million.  
15

16 **Q. Why will the termination of marine transport of petroleum have direct, indirect,**  
17 **and induced economic effects?**

18 A. According to Tidewater, the company must lay off approximately 89 employees from  
19 their barge line and terminal company if it no longer transports petroleum upriver from  
20 Portland. The affected employees include administrators, maintenance workers, river  
21 operators, and terminal workers. These lost jobs and associated lost income represent the  
22 direct impacts on Tidewater. Economic consequences, however, do not stop at direct  
23 impacts. As these direct impacts ripple through the local, regional, and state economies,  
24 they generate secondary impacts. There are two types of secondary impacts; indirect and  
25 induced.  
26



1 Indirect impacts occur, for example, if Tidewater purchases fewer inputs. If Tidewater  
2 makes fewer trips on the river because it no longer moves petroleum, it will purchase and  
3 use less fuel, oil, and other maintenance goods and services. As Tidewater purchases  
4 less, the companies that it purchases from suffer economic consequences. We calculate  
5 indirect impacts on jobs and income.

6 Induced impacts occur through reduced consumer spending. Jobs and income lost  
7 through direct and indirect impacts result in less spending for consumer goods such as  
8 furniture, clothing, entertainment, etc. We calculate induced impacts on jobs and income.  
9

10 **Q. Are economic multipliers a commonly accepted way to calculate the additional**  
11 **economic effects?**

12 A. Yes. Calculating indirect and induced employment and income impacts using multipliers  
13 is a standard, commonly used, and accepted technique.  
14

15 I calculated employment and income impacts in this analysis using IMPLAN (for Impact  
16 analysis for PLANning) software. This computer program was designed specifically to  
17 calculate economic impacts of policy decisions and other factors that influence local,  
18 regional, state, or national economies. IMPLAN was developed by the U.S. Forest  
19 Service in cooperation with the Federal Emergency Management Agency and the Bureau  
20 of Land Management to assist federal agencies in their land and resource management  
21 planning. The application of IMPLAN by the U.S. Government, public agencies, and  
22 private firms span a wide range of projects, including broad resource-management  
23 strategies, individual projects such as proposals for developing ski areas, coal mines,  
24 transportation facilities, and the harvesting timber or other resources. ECONorthwest has  
25 applied the software on a variety of public and private sector projects, including a major  
26

1 U.S./Canadian gas pipeline project, a refinery expansion in Alaska, and a proposal to  
2 develop a ski area on land managed by the U.S. Forest Service.

3 Proponents of the pipeline used this same IMPLAN software to calculate the employment  
4 and income impacts of the construction phase of the proposal. (EFSEC Application 96-1  
5 revised May 1, 1998, page 8.1-12).  
6

7 **Q. Please describe in detail the impacts of the proposed pipeline on Columbia River**  
8 **grain transportation.**

9 A. Tidewater currently moves approximately 70 percent of the grain down the Columbia  
10 River in 62 barges. Much of this grain is exported. Tidewater accounts for  
11 approximately 10 percent of the total grain exported from the United States. (Hickey  
12 Pers. Comm.) Total grain shipments, in tons, is set out in Exhibit EW-13. In 1998,  
13 Tidewater alone transported 4.2 million tons of grain.  
14

15 Tidewater has two competitors on the Columbia River: Shaver Transport (14 grain  
16 barges) and Foss (5 grain barges). Shaver moves approximately 20-25 percent of the  
17 grain on the Columbia River, and Foss moves approximately 5 percent. (Hickey Pers.  
18 Comm.)

19 The movement of petroleum barges up and down river directly impacts the movement of  
20 grain barges. Tidewater has four double-hulled petroleum barges, five single-hulled  
21 petroleum barges, and 62 standard grain barges. Each petroleum barge is grouped with  
22 empty grain barges on trips upriver. The size of the locks on the Columbia River restricts  
23 a tow to a length of no more than two standard barges and a width of two barges.

24 Tidewater's new double-hulled petroleum barges are the width of two standard barges.

25 Therefore, in a single tow Tidewater can move either two double-hulled petroleum  
26

1 barges, or four standard barges, or one double-hulled barge and two standard grain  
2 barges, or any combination of standard petroleum barges and standard grain barges  
3 adding up to the equivalent of four standard barges.

4 If Tidewater's petroleum barging operations cease, two things will happen. First, grain-  
5 transport prices will increase. At the moment, the movement of petroleum shares the  
6 transportation cost for the movement of grain (backhaul opportunities). Without the  
7 capabilities to move petroleum, grain transports must bear the entire transportation cost.  
8 Grain transportation costs will also increase as a result of Tidewater's efforts recoup  
9 \$20 million in sunk costs in the suddenly idled double-hulled barges.

10  
11 Second, the frequency of grain transportation will diminish. Under the current system,  
12 transportation of petroleum causes Tidewater to make frequent movement up and down  
13 river. If Tidewater transports only grain, the frequency will depend more on when the  
14 supply of grain upriver is large enough to make a downstream trip economically viable.

15 Tidewater currently charges a flat fee to move grain. Large and small customers pay the  
16 same price. Tidewater's prominence on the rivers makes it the price leader. Shaver and  
17 Foss generally follow Tidewater's prices, though at times these shippers offer discounts  
18 to fill a tow that other wise would wait for a full load or leave less than full. Thus, as  
19 Tidewater is forced to increase price in response to increased costs, the other barge  
20 companies will follow. (Hickey Pers. Comm.)

21  
22 Tidewater's size in the market place (70 percent market share), its frequency of service,  
23 and its flat-fee rates provide pricing stability to Washington's grain growers. The  
24 proposed oil pipeline jeopardizes this stability.

1 According to Ken Casavant, of the Department of Agricultural Economics at Washington  
2 State University, eliminating backhauling opportunities will not only increase prices  
3 charged for moving grain via barge, but transportation charges for moving grain via rail  
4 will also likely increase. There are a number of reasons for this.

5 Rail prices, in general, respond to price movements in barge rates. Currently, rail rates  
6 are close to the marginal costs of providing the service. That is, prices charged for rail  
7 service are close to the costs of providing the service, leaving little if any profit. In this  
8 situation, if grain barging prices are raised due to lost backhaul opportunities, rail  
9 companies will no doubt take the opportunity to increase prices.

10  
11 Alternatively, rail companies could maintain current prices and expand market share.  
12 Other factors, however, constrain rail's share of the transportation market for grain. Rail  
13 companies are, in general, not aggressive in the market for grain in the Pacific Northwest  
14 because returns are higher in other markets. In the Midwest, for example, transportation  
15 distances are longer, thus increasing revenue and profits. In Eastern Washington,  
16 transportation distances to terminals is shorter and turnarounds at terminals more  
17 frequent. Turnarounds can be time consuming and inefficient. Thus, short haul distances  
18 with frequent turnarounds limits profit potential in this market compared to profits in  
19 other markets.

20 The seasonality of demand also limits rail's market share. In Eastern Washington,  
21 demand for grain transportation peaks in the spring, when storage areas reduce inventory  
22 to make room for the up-coming harvest, and again in the fall after the harvest. At peak  
23 periods there can be a shortage of rail cars. While rail companies could supply additional  
24 cars and capture more of the seasonal demand, during the rest of the year these cars would  
25  
26

1 sit idle. Idle cars increase costs, further reducing profits. Thus, the low profit potential  
2 limits investments in rail cars in this region.

3 The proposed Cross Cascade pipeline will likely increase transportation costs for grain  
4 via barge *and* rail, and reduce frequency of barge shipments. It is my opinion that grain  
5 producers in this region will face increase costs and greater uncertainty if the proposed  
6 pipeline is built.

7  
8 **Q. Describe how the pipeline could reduce competition for petroleum products in**  
9 **Eastern Washington.**

10 A. According to Olympic, the proposed pipeline must deliver 60,000 BPD of petroleum to  
11 be economical. The proposal is not economically viable for deliveries less than this  
12 amount. Deliveries less than 60,000 BPD could require Olympic to charge increased  
13 tariffs that would make the project unprofitable, or cost shippers so much that the project  
14 would not meet Olympic's "need statement."

15  
16 This threshold-delivery quantity is nearly equivalent to the current total demand for  
17 petroleum in Eastern Washington. [pg 10 of this testimony.] Therefore, economic  
18 viability of the proposed pipeline requires displacing the existing delivery systems in this  
19 area. Such a development, while improbable, would reduce competition and likely  
20 increase consumer prices.

21 Currently, consumers enjoy the benefits of a multi-source, multi-delivery petroleum  
22 system. Product delivered to Eastern Washington originates from refineries in Puget  
23 Sound, California, Montana, and Utah. Product travels via multiple-delivery systems  
24 including, Olympic's north-south pipeline, ocean barges from California and Puget  
25 Sound, river barges, and the Yellowstone and Chevron pipelines. The current supply and  
26

1 demand characteristics, which include the factors described above, yields some of the  
2 least expensive gasoline prices at the pump in the state of Washington.

3 Given the scenario described above with the proposed pipeline, the refineries in a *single*  
4 area, Puget Sound, would supply all residents and businesses in Eastern Washington.  
5 Thus, the sources of supply are dramatically reduced. Likewise, a single supply  
6 mechanism, the proposed pipeline, would transport supply to this area. As noted  
7 elsewhere, some of the would-be owners of the proposed pipeline also own refineries in  
8 Puget Sound. It seems highly unlikely that such a dramatic reduction in competitive  
9 conditions will yield benefits for consumers. It certainly seems unlikely that such a  
10 scenario will continue supporting some of the least expensive gasoline in the state. The  
11 economic viability of the proposed pipeline seems dependent on dramatically reducing  
12 competitive conditions in Eastern Washington. The current competitive market yields  
13 significant consumer benefits in the form of inexpensive gasoline.  
14

15  
16 **END OF DIRECT TESTIMONY**

17  
18 Dated this 12th day of February, 1999.

19  
20 \_\_\_\_\_  
21 Ed Whitelaw  
22  
23  
24  
25  
26

### Projected Population Growth in Western Oregon and Washington and Eastern Washington

	2000	2020	Ave. Annual Growth Rate	Absolute Change
Western Washington and Western Oregon <sup>1</sup>	7,286,160	9,352,585	1.26%	2,066,425
Eastern Washington	1,307,448	1,674,981	1.25%	367,533

<sup>1</sup> Western Washington Counties: Whatcom, San Juan Island, Skagit, Clallam, Snohomish, King, Kitsap, Jerrerson, Mason, Grays Harbor, Thurston, Pierce, Lewis, Pacific, Wahkiakum, Cowlitz, Skamania, Clark. Western Oregon Counties: Clatsop, Columbia, Tillamook, Washington, Multnomah, Clackamas, Yamhill, Polk, Marion, Linn, Benton, Lincoln, Lane, Douglas, Coos, Curry, Josephine, Jackson.

Source: Washington Counties, Office of Financial Management, Forecasting Division. Washington State County Population Projections by Age and Sex: 1990-2020. Oregon Counties, Office of Economic Analysis, Department of Administrative Services, State of Oregon, January 1997

### Direct Impact on Tidewater Barge and Terminal

	County, State	Positions Eliminated	Lost Income
Tidewater Barge	Clark, WA	60	\$3,950,100
Tidewater Terminal	Umatilla, OR	3	\$186,930
	Whitman, WA	4	\$239,020
	Franklin, WA	22	\$1,299,530
<b>Total</b>		<b>89</b>	<b>\$5,675,580</b>



### Direct, Indirect, and Total Impacts

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
Clark, WA			
Jobs	60	149	209
Income	\$3,950,100	\$4,718,777	\$8,668,877
Umatilla, OR			
Jobs	3	2	5
Income	\$186,930	\$68,499	\$255,429
Whitman, WA			
Jobs	4	3	7
Income	\$239,020	\$112,088	\$351,108
Franklin, WA			
Jobs	22	18	40
Income	\$1,299,530	\$609,413	\$1,908,943
<b>Total</b>			
<b>Jobs</b>	<b>89</b>	<b>172</b>	<b>261</b>
<b>Income</b>	<b>\$5,675,580</b>	<b>\$5,508,777</b>	<b>\$11,184,357</b>

**Grain Shipments  
(Tons)**

	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
January	285,123	520,144	352,843	466,700	369,453	325,601
February	297,923	420,111	470,319	191,878	404,874	215,248
March	206,176	315,875	207,725	281,721	281,818	212,332
April	326,803	244,887	228,617	257,333	216,997	240,641
May	274,442	421,665	236,507	224,752	259,082	198,747
June	195,592	263,501	174,803	150,114	199,349	187,767
July	264,365	328,191	343,523	273,048	338,169	399,018
August	579,953	170,703	480,693	694,762	543,408	537,090
September	332,272	352,309	402,158	453,801	348,351	369,804
October	232,240	331,513	468,037	364,339	338,295	586,781
November	365,374	603,580	552,131	435,743	390,830	565,323
December	522,307	410,450	498,376	358,989	409,352	402,738
<b>TOTAL</b>	<b>3,882,570</b>	<b>4,382,929</b>	<b>4,415,732</b>	<b>4,153,180</b>	<b>4,099,978</b>	<b>4,241,090</b>
<b>AVERAGE</b>	<b>323,548</b>	<b>365,244</b>	<b>367,978</b>	<b>346,098</b>	<b>341,665</b>	<b>353,424</b>

**Petroleum Shipments Upriver**  
**(Barrels)**

	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
January	784,974	806,747	1,001,361	1,098,591	1,096,985	906,175
February	640,466	657,594	810,096	690,461	1,068,345	1,007,880
March	852,738	683,402	776,174	1,140,768	698,316	810,826
April	1,066,569	875,638	1,352,683	1,476,914	1,164,630	991,858
May	968,018	1,080,702	1,255,172	1,404,216	1,369,110	1,413,930
June	1,130,838	1,113,630	1,505,029	971,268	1,319,553	1,481,957
July	1,078,445	872,856	1,446,246	1,342,697	1,131,984	1,392,056
August	1,077,833	1,253,474	1,629,762	1,539,705	1,454,322	1,499,119
September	1,305,470	1,429,667	1,827,124	1,540,773	1,534,874	1,604,010
October	1,378,857	1,310,888	1,693,395	1,405,261	1,405,697	1,638,870
November	1,252,689	1,200,175	1,403,719	1,264,026	1,166,040	1,231,392
December	1,032,250	960,231	1,050,741	855,917	1,179,844	1,048,406
<b>TOTAL BBL</b>	<b>12,569,147</b>	<b>12,245,004</b>	<b>15,751,502</b>	<b>14,730,597</b>	<b>14,589,700</b>	<b>15,026,479</b>
<b>AVERAGE BBL PER MONTH</b>	<b>1,047,429</b>	<b>1,020,417</b>	<b>1,312,625</b>	<b>1,227,550</b>	<b>1,215,808</b>	<b>1,252,207</b>
<b>AVERAGE BBL PER DAY</b>	<b>34,436</b>	<b>33,548</b>	<b>43,155</b>	<b>40,358</b>	<b>39,972</b>	<b>41,168</b>

1993-1998 ½% per year

### Average Price of Unleaded Fuel in Washington

City	Presidents' Day '98	Holidays '98	President's Day '99
Bellingham	\$1.157	\$1.086	\$1.019
Seattle	1.220	1.087	1.080
Vancouver	1.145	1.066	1.022
Tri-Cities	1.081	1.005	0.935